FY '03 EQIP COST LIST NOTES & ASSUMPTIONS - MASSACHUSETTS

Practice Code	Practice	Cost Type & Notes	Assumptions in the Cost List (costs include the following elements / components:)
CNMP	Comprehensive Nutrient Mgt Plan	Flat Rate (FR)	CNMP1 is where a CNMP is required by Program Rule or CAFO regulations CNMP2 is where the applicant is voluntarily developing a CNMP
313	Waste Storage Facility	Entire project should be listed as AM on the contract. Certain components are listed as AA. Includes both waste storage structures and waste storage ponds. Because waste storage facility sites and types can vary greatly, the cost of the facility is broken down by individual components for the specific site. Use the average rates for the components needed for the facility. If a required component is not listed anywhere in the cost list, base on engineer's estimate.	• Concrete, poured in place (floors, ramps, walls) Installed cost of forming, installing and tying steel rebar, installing waterstops, placing and curing concrete; does not include site preparation, excavation or fill, drainage, etc. Separate price for concrete curbs when needed • Concrete walls, precast Typically includes Chase precast panels; includes delivery and setting in place; does not include excavation, backfill, drainage, etc. • Preapproved Storage Structure Typical example is SlurryStore; use engineering estimate based on size; usually includes concrete floor, pumps, delivery pipe; does not include site preparation, excavation and earthfill, gravel fill, reception pit • Concrete Block Structure Price based on the square footage of the inside exposed face of the blocks to form the walls. Excavation and backfill costs are not included. • Roof Roof is for standard drawing truss or shed roof, or other approved roof structure. Priced by the square foot of the roof footprint • Timber Wall - Cost per lineal foot includes all material and labor necessary to install the wall once the site is prepared • Waste Storage Pond costs will be based on the specific design and components (excavation, earthfill, drainage, floor concrete, seeding, impervious liners, etc.) • Excavation for earth and rock. Earth prices depend on the use or disposal of the material. • Earthfill (class C compaction) from on site sources, if suitable for backfill. Price also included for earthfill brought in from off-site when needed. • Bank run sand and gravel to be used as free draining backfill, or for additional fill beneath structures, from an off-site source when required. • Gravel fill (compacted) for foundation and subbase. Includes sand & gravel mixture, or sand if specified. • Seeding - uses same price as critical area planting • Higher cost for safety fence around structure due to need for high quality fence to exclude humans. • See 606 for costs of subsurface drainage when required.
314	Brush Management	AA and AM	Mechanical/Chemical/Biological treatment
317	Composting Facility	Project should be listed as AM based on engineer's estimate	Use the average rates for the components needed for the facility. If a required component is not listed in the cost list, base on engineer's estimate.
324	Deep Tillage	Flat Rate (FR)	One time only; rate per acre

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329	Residue Management	Flat Rate (FR)	Incentive payment; acre per year for maximum of 3 years
330	Contour Farming	Flat Rate (FR)	For establishing contours the first time only; rate per acre
340	Cover Crop	Flat Rate (FR)	Vegetative practice; acre per year times years in the contract. Separate price for conventional & aerial seeding
342	Critical Area Planting	AA Typically, this cost is already incorporated into the other practices, except where noted.	Seedbed preparation Lime and fertilizer Cost of seed mix for erosion control, and application of seed Mulching and tacking
350	Sediment Basin	AM based on Eng. est. Used to trap solids from barnyards, structures, etc prior to treatment.	Basins will vary depending on the need and the site, so base on engineering design & estimate.
356	Dike	AA for dikes over mineral soils; AM for dikes over organic soils where special measures are needed to limit subsidence Refers to Class IV dikes associated with cranberry bogs.	The listed price per lineal foot is for dikes to be located over predominately mineral foundation soils, where little or no settling is anticipated. The price includes preparation of foundation prior to placing fill, seeding and woods turf as required. For dikes to be placed over foundation soils where significant settling is expected (organic soils), the listed price per foot would not be valid. Careful site and soils investigation, including GPR and soil testing, would likely be needed. The price would be very site specific and depend on the engineering design.
362	Diversion	AA For erosion control or for diverting clean water from barnyards, etc (Q_{10} or Q_{25} design)	Grading and shaping Excavation and earthfill Critical Area Planting Does not include subsurface drainage if required. Refer to 606 for prices of tile drainage.
365 & 366 367	Anaerobic Digesters Waste Facility Cover	Entire project should be listed as AM	Based on consultant design; check with Carl & Rick on what components may be included for cost share. All manure storage and handling components can be included under their respective practice codes and costs.
378	Pond	AA Base size on water needs, including assessment of recharge	The listed price per cubic yard includes excavation, spreading of spoil material. Different prices reflect distance to area of spreading or to hauling. Refer to the pipe cost lists for any pipes or outlet works, if needed.
382	Fence	AA Permanent fence on prescribed grazing systems; Exclusion of livestock from water resources For confinement to barnyard areas, and safety fence around structures and ponds	Installed according to Fence (382) Standard, or manufacturer's recommendations All prices include posts Fences around barnyards reflect higher per foot costs due to short runs, additional corners, etc. Higher cost for safety fence around structure due to need for high quality fence to exclude humans

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386	Field Border	AA	Establishment; rate per acre
391	Riparian Forest Buffer	AA	Option 1: 3-zone, 100 ft wide buffer The costs are computed as follows: Mixed hardwood trees – 3 rows @ 20'x20' = 65 trees @ $5 = $325 (minimum 2-2 seedlings w/ wildlife tree protectors) Mixed shrubs – 3 rows @ 5'x5' = 260 shrubs @ $1.50 = $390 Grass – 20' width = 0.2 ac @ $500 = $100 Total buffer cost – $325 + $390 + $100 = $815/ac Option 2: Individual components Mixed Hardwood trees – 20'x20' = 110 trees/ac @ $5.00 = $550/ac (min 2-2 transplants with tree protectors Mixed Shrubs – 5'x5' = 1740 shrubs/ac @ $1.50 = $2610/ac Grass Buffer (native species preferred) - $500/ac
393	Filter Strip	For '03 EQIP, the only ag-waste related application is for treatment of runoff from barnyards. Use the 635 standard for treatment of wastewater from structures, milkhouse, etc.	Grading and shaping Level lip spreader (often a gravel trench) Subsequent trenches along the strip, when needed Seeding of the strip, including measures needed to ensure growth of the seeding (watering) Sodding price adds $0.50 per square foot to substitute sod for seed; includes watering Does not include tanks and pumps needed for milkhouse waste filter strips Does not include a settling facility for solids (See 707). Note: Filter strips to be installed as an erosion control practice (along field borders) are to be priced as critical area planting.
410	Grade Stabilization Structure	AM	Since the costs will vary greatly from site to site, the cost will be developed by an engineer.
412	Grassed Waterway	AA	Includes grading and shaping, excavation and fill, seeding and mulching Does not include subsurface drainage if required. Refer to 606 for prices of tile drainage. Separate price is listed for stone center waterway. The stone center is to handle continuous low flows where vegetation cannot be established due to wetness. The price does not include larger rock for erosion control due to excess velocity, which would be handled under 468, Lined Waterway or Outlet.
430	Irrigation Water Conveyance	AA for most items AM for filters, valves, regulators since their prices can vary sharply.	Cranberry systems: priced by the acre, depending on the spacing and pattern A system that will achieve the required 85% CU. Also, option for systems that minimize the washoff time when chemigating. The listed prices are for mainline systems that meet the CU criteria, with or without the "H" (or similar) pattern. If the grower still wishes a 50'x60' spacing system, the contract must provide that he or she will replace or retrofit the laterals and sprinklers such that a uniformity of at least 85% will be achieved. The prices reflect the costs of several jobs, and include all materials and labor to install the mainline. Other systems based on engineering estimate for lengths of pipe and components. Thrust blocks included in PVC prices. When pricing filters, valves, etc, suggest determining the actual need and price to use in contract.

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436	Irrigation Storage Reservoir (Pit)	AA Base size on water needs for irrigation, including assessment of recharge	The listed price per cubic yard includes excavation, spreading of spoil material. Different prices reflect distance to area of spreading or to hauling. Refer to the pipe cost lists for any pipes or outlet works, if needed.
441	Irrigation System, Microirrigation	AM For "permanent" crops (orchards, berries, vineyards, etc) only	Mainlines, filters, valves, etc covered under 430 Includes durable driplines only (no drip tape) Base on engineering estimate of components
442	Irrigation System, Sprinkler	AA	Cranberry systems: priced by the acre Prices listed as per acre costs for the laterals and appurtenances to ensure a system that has a uniformity of at least 85% (combination of pressure, spacing, and high uniformity nozzles). Additional prices listed for retrofitting an existing 50'x60' to a 50'x40' spaced system to meet 85% uniformity. Prices include cost of the risers, heads, and nozzles for any system that meets the required high uniformity of 85%. Other systems priced by the foot for the needed pipeline, based on engineering estimate. Risers and heads not to be included. The listed prices include installation and any required seeding.
447	Irrigation Tailwater Recovery	AA for excavation AM for lift pumps For cranberry systems	Must have water quality AND quality benefits to receive 75% cost share; otherwise use 50%. Generally involves excavation of a new pond, or use of an existing area to store water for reuse. Prices include excavation on a cubic yard basis, a lift pump not to exceed $10,000 (times appropriate cost share rate). For pipe prices, refer to the cost list for irrigation pipelines.
449	Irrigation Water Management	Flat Rate (FR)	Incentive payment for implementing IWM. Payment per acre times number of years of contract.
466	Land Smoothing	Flat Rate (FR) Cranberry systems only	Cost reflecting the extra effort needed to more precisely level the bog to save water. Normally done only when renovating bogs. Stripping and sanding the bog not to be included.
468	Lined Waterway or Outlet	AA	Includes grading and shaping, excavation and fill, delivery and installation of rock riprap, including bedding, and seeding. This price is for rock riprap required to resist excess velocity, and not for stone center waterways, which are installed due to wetness. See 412, Grassed Waterways, for price for stone centered waterways.
484	Mulching	AA	Biodegradable mulch for annual crops to reduce the waste generated by using non-biodegradable plastic mulch. Price based on area covered by the mulch.
511	Forage Harvest Management	Flat Rate (FR)	Implementing forage cutting plan to control invasives and improve forage quality; rate per acre
512	Pasture and Hayland Planting	AA For the establishment of permanent vegetation on cropland and for no-till pasture improvement.	Seedbed preparation, lime, fertilizing, and seeding.

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516	Pipeline	AA for most items AM for pump For livestock watering	Refer to the pipeline prices for the corresponding pipe size Pipe prices include installation, couplings as needed, and seeding of disturbed areas Hydrants (frost free) and drain valves are listed as installed prices See 574, Spring Development and 614, Watering Facility for prices for those practices. Other items, like ram pumps or other devices associated with livestock watering need to be priced separately and added to the pipeline price.
533	Pumping Plant	AM For Irrigation	Price varies considerably, so base on engineering estimate of actual needs. Includes pump and motor/engine up to a total cost of $10,000 (applicant receives 50%). For electric motors, reimburse for all items "downstream" of (but not including) the electric panel/switch.
558	Roof Runoff Structure	AA for gutters & UGO AM for drywells and runoff collection System capacity for either Q_{10} or Q_{25} storm	Gutters and french drains share the same price per foot For gutters, measure the roof edge distance for the length. The cost per foot includes the downspouts (do not add the length of the downspouts) The french drain price includes the perforated tubing within the gravel trench. Neither gutters nor french drains include the underground outlet, since this length will vary. Use the listed price for underground outlet, which includes solid pipe outlet, animal guard and headwall (if needed). If a drywell is to be used to discharge the roof runoff, compute the cost based on the size and materials needed and add 75% of that cost to the cost of the gutters or french drains (Eng Est). Use engineering estimate for a runoff collection system when applicable.
560	Access Road	AA	Excavation, grading and shaping Geotextile, if required Gravel fill for the surface; however does not include "compacted gravel" Does not include culverts; refer to the listed pipe prices for pricing culverts.
574	Spring Development	AA	Costs for the development of the spring (spring box, collection pipe, etc). Refer to 516, Pipeline for the pipe, hydrant, and drain valve prices, and to 614 for the trough or tank price.
575	Animal Trails and Walkways	AA	Excavation, grading and shaping Geotextile, if required Gravel fill for the surface; however does not include "compacted gravel" Does not include culverts; refer to the listed pipe prices for pricing culverts.
582	Open Channel	AA For By-pass channels for cranberry bogs	Based on cubic yards of excavation, including seeding. See 587 for water control structures, and 560 (Access Rd) for culvert prices
587	Structure for Water Control	AA For cranberry systems	Prices based on installed costs for selected aluminum riser and barrel sizes; includes base plate for flotation resistance. The risers are assumed to be 5 feet or less in height. Includes 20 feet of pipe. If additional pipe is needed, add using aluminum listed pipe prices. These prices reflect special price for annular corrugations used for this application only.
590	Nutrient Management	Flat Rate (FR)	Payment per acre times number of years of contract NM1 – for managing only inorganic forms of nutrients NM2 – managing inorganic and organic forms NM3 – certified organic operations, and those transitioning & practicing organic production

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595	Pest Management	Flat Rate (FR)	Payment per acre from Pest Management Excel Worksheet.
600	Terrace	AA For control of sheet and rill erosion	Grading and shaping Excavation and earthfill Critical Area Planting Does not include subsurface drainage if required. Refer to 606 for prices of tile drainage. Does not include underground outlet, if needed. Refer to 620.
606	Subsurface Drainage	AA Used only as a component of contour farming, stripcropping, waterways, diversions, terraces, and for drainage around structures.	Prices are listed for corrugated PE tubing with or without gravel trenches for different sizes. The prices include all material, installation, and seeding as required. Prices are the same for perforated and non-perforated. Non-perforated tubing might be used as outlet tubing for roof runoff, terraces or diversion outlets, outlet pipe for drainage systems around structures, etc. These same examples would generally not require a gravel trench. For outlet pipes to subsurface drainage systems, refer to the 620 list for PVC outlet pipe prices.
609	Surface Roughening	Flat Rate (FR)	Refer to standard for applicability and criteria
614	Watering Facility	AM	Base on estimate, including gravel foundation, tank (of whatever material is to be used), and float valve, up to $400 maximum. Refer to 516, Pipeline for all pipe, hydrants and drain valve prices.
620	Underground Outlet	AA Only used as a component of other practice	For outlets of roof runoff, terraces, water & sediment control structures. Gravel trenches not normally used. Non-perforated tile is normally used, unless field drainage is also needed. Riser and outlet pipe prices also listed.
633	Waste Utilization	Flat Rate (FR)	More than one method may be used in the contract. WU1 – Implementation of the basic spreading plan WU2 – Transporting manure to new, non-traditional land to use excess manure WU3 – Custom spreading to improve efficiency & precision of application WU4 – Innovative approaches to utilizing agricultural wastes; determine the “unit” on case-by-case basis (contact Rick)
634	Manure Transfer	AM	Base on engineer’s estimate of components needed (hoppers, valves, pipes, pumps, etc)
635	Waste Water Treatment Strip	AM For treatment of waste water from structures, composting facilities, milkhouse, silage leachate, and other waste water.	Base on cost on engineering design for needed components.
638	Water and Sediment Control Basin	AA For control of ephemeral erosion and to control the release of water.	Grading and shaping Excavation and earthfill Critical Area Planting Does not include subsurface drainage if required. Refer to 606 for prices of tile drainage. Does not include underground outlet. Refer to 606 or pipe cost list.

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642	Well	AA and AM	For livestock watering and irrigation, where other suitable water source is not available. Drilled well and casing priced per foot. Other pricing based on estimate not to exceed listed maximums.
656	Constructed Wetland	AM	The design will be based on the type of treatment needed for water quality improvement, or could be simply creation of wetlands for wildlife improvement, etc. Since the costs will vary greatly from site to site, the cost will be developed by an engineer.
660	Tree/Shrub Pruning	AA	
666	Forest Stand Improvement	AA	For thinning and/or releasing. Only one payment to be made (not a separate payment for thinning and one for releasing)
701	Ag Fuel Secondary Containment Facility	AM This practice refers to facilities that serve as secondary containment for on-farm fuel tanks.	Base on engineering estimate for complete installation, not to exceed $5000 (applicant receives 50%)
702	Agrichemical Mixing Facility	This practice refers to facilities that have a concrete pad for driving sprayers onto when mixing chemicals; facilities for cranberry systems or portable systems must be handled differently.	Based on engineering estimate. Typically about a 15 x 25 ft concrete pad, with an integral 5 x 20 ft attached concrete utility pad Includes special quality concrete with rebar (not wire mesh), special forming included Compacted sand or gravel for subbase, when needed 300 gallon spillage tank (sump), 2 - 300 gallon water tanks, water & chemical pump and valves Roof is for standard drawing truss or shed roof, or other approved roof structure. Priced by the square foot of the roof footprint
707	Barnyard Runoff Management	This practice will include the paving aspect in this cost list and settling facility. Refer to all other necessary component practices in the cost list.	Concrete paving prices based on thickness of the pad according to the standard. Cost per square foot of paving also includes grading and shaping, sand or gravel fill for subbase if required, geotextile if required, and curbs. If rebars are planned in the slab, refer to the 313 practice for cost. Asphalt paving includes grading and shaping, subbase material, and curbs Compacted gravel paving includes grading and shaping, subbase material, geotextile and curbs. Settling facility type and size could vary considerably, so base on engineer's design & estimate (see 350)
766	Restoration of Natural Ecosystems	AA, AM, and Flat Rate (FR)	Payment method depends on the treatment type performed
789	Transition to Organic Production	Flat Rate (FR)	Incentive payment per acre TO1 – Conversion to organic production, but not pursuing certification TO2 – Operations that will become certified at the end of the transition period